REPORT ON THE

CAWNPORE EXPERIMENTAL STATION

FOR THE KHARIF SEASON OF 1886.

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DEPARTMENT OF AGRICULTURE AND COMMERCE, N.-W. P. AND OUDH.

DATED CAWNPORE, THE 22ND JANUARY, 1887.

FROM

DONALD SMEATON, ESQ., M.A., C.S.,
DIR., DEPT. OF AGRI. AND COMMERCE,
N.-W. PROVINCES AND OUDH,

To

THE CHIEF SECRETARY TO GOVERNMENT,
N.-W. PROVINCES AND OUDH.

SIR,

I HAVE the honor to submit, for the consideration of his honor the Lieutenant-Governor, the report written by Mir Mahomed Hosein, Assistant Director of Kharif Operations on the Cawnpore Experimental Station.

2. The heavy hailstorm in the end of October destroyed most and damaged the remainder of the crops on the station.

Mir Mahomed Hossein accordingly has only noticed the continued experiments in cotton and maize culture.

3. The most important of the cotton experiments was that which has confirmed the belief that—

(I) Deep ploughing is better than shallow ploughing for cotton;
(II) And that the effect of deep ploughing is greatly enhanced by manuring.

4 As regards maize, the experiment has shown that although the weight of the yield obtained by cultivating on the American fashion is less, the cobs are larger and plumper.

Further experiment may show that the American method, called the "hill" method, will yield a larger gross yield, the theory of the Americans being that the more sunlight the plants get the more and the larger cobs they will yield.

5. The rest of the experiments do not call for special mention.

I have the honor to be,

SIR,

Your most obedient servant,

DONALD SMEATON,

Director.

REPORT

ON THE

CAWNPORE EXPERIMENTAL STATION

For the Kharif Season of 1886.

Character of the season.—The season had been quite an extraordinary and unfortunate one in many ways for the crops. The experimental station was an especial victim of it. The rain commenced very early and the season seemed to be very promising, but a long break of the rain in August just at the time it was greatly needed caused good deal damage to maize crops. It ceased for about 20 days altogether, and we were obliged to protect some of the fields by irrigation. After that, till about the end, the monsoon had been very regular and favourable, but at the time the pulses and millet crops were ready for being harvested, and only four or five times cotton picking was done, a most severe hailstorm killed the former crops all of a sudden and damaged the latter (cotton) considerably. In some fields the hailstones accumulated as thick as three inches, and did not melt altogether for 36 hours. The fearful storm did not only spoil the kharif harvest entirely, but has done great harm to the present *rabi crops* too. The early sown cereals were beaten down flat and plucked off to some extent, and the seed which was not come out yet, owing to fine tilth of the fields being silted up, did not germinate well. The great damage which it has done is spoiling the culture of the rabi fields, which more or less will affect the crops on the whole.

Under the circumstance the results of experiments in review are not worth laying any stress upon. However, the result of the cotton and maize crops have been recorded, and of the pulses and millet which did not give any produce are left off.

The cotton and maizes experiments are very old on the farm, and by continuous operations their results have been fairly confirmed. It is therefore intended that from the next season for three succeeding years indigo and sugarcane culture, which has got a very high place in Indian farming, will be added in the list of experiments.

For the sake of teaching the agriculturists that how and in what way their business can be more paying, the experiments mostly will be tried not from the scientific but from the economical point of view. The tables herewith appended will give the detail of the special treatments, and the results of the experiments.

Under the head of cotton the experiments were—

(a) *Keeping nankin or khaki cotton plots for 2 or 3 years in a field half ratooned and half unratooned* to see:—

(1) The comparative produce of the ratooned against the unratooned portion of the field.

(2) The comparative yield of them against the field sown annually.

(3) The effect of the long standing over the color of the cotton.

(4) The effect and economy of purchased fertilizer against the common farmyard manure.

Both of the plots (ratooned and unratooned) were grubbed twice and weeded once. Saltpetre and superphosphate at the rate of 2 cwt. per acre applied. There was no other cost above that.

From table No. I it will be seen—

(1) That unratooned portion gave more cotton and less seed than the ratooned one.

(2) Comparing with the result of the same kind of cotton fresh sown, the result of which is tabulated in statement No. 2, it will be seen that this has given much larger yield.

This may be attributed partly to the effect of the artificial manure applied to.

(3) There was no difference of color between the two crops in this (first) year.

The economical result of applying costly manure is no good, but it may be owing to the bad season.

(*b*) *The same cotton sown in two plots, side by side, in one before and in the other after rain :—*

Each plot was of 1286 square yards; the one sown before rain was irrigated once. Farm yard manure at 200 maunds per acre was given to both.

All other treatments for both were the same.

The Statement No. II will show that the cotton sown after rain gave comparatively better yield. This is however extraordinary. Early sowing for cotton, as a rule, is always better.

The economical result of either is not good.

(*c*) *Country cotton sown before and after rain with four different kinds of manures. To determine—*

(1) The result of early and late sowing.

(2) The effect of the manures applied.

From statement No. III. it will be seen that the cotton sown before rain has at an average shown better result than that sown after rain, being 84 against 59 lbs. per acre.

(3) The effect of the manures on the two kinds of sowing appeared to be changeble. This may be due to the unfavorable season.

(*d*) *To determine the effect of deep and shallow ploughing, with the improved and country ploughs alone, and with and without manure :—*

(1) Four plots of 300 square yards each were treated as follows. They did not receive any manure :—

One with Watt's plough, 9 inches deep.
One „ Duplex „ 5 „ „
Two „ Country „ 3 „ „

(2) Six other plots were divided into two portions *A* and *B*, each being of 800 square yards. They were operated as under—No. 5 *a* and *b* ploughed 9 inches with the Watt's plough—No. 6 *a* and *b* ploughed 5 inches deep, No. 7 *a* and *b* ploughed 3 inches deep. To all *A* plots 100 maunds per acre farm yard manure was applied. All the *B* plots were left unmanured.

The appended statement No. IV confirms the result that the deep ploughing has advantages over the shallow one and the deep ploughing with manure is still more advantageous.

The experiments on maize were conducted as follows :—

(*a*) *Sowing maize after American fashion to determine* (1) its advantages against the country way of sowing, (2) to find out the difference between the cost of the two processes.

A field was divided into 4 plots of ¼ of an acre each. One of them was sown after country fashion, *i.e.*, seed thrown in the furrows behind a plough, and in three plots the seed was sown in lines 2, 3, and 4 feet apart. The plants in all plots were earthed up.

The statement No. V. will show that—

(1) The country way of sowing has produced more.

(2) That the thinner the sowing the less the yield was.

Plot No. 1 produced 1,328 lbs. of grain against 241 lbs. obtained from No. 4 plot sown 4 feet apart.

(3) That in the cost of the two kinds of sowing there is no marked difference.

There is however one fact to be noted, that the cobs of the plants sown in lines were larger and more plump than those of the other plots.

(*b*) *Determination of the effect of different fertilizers on maize grown year after year in* 13 *plots termed Standard, and to compare their results with other* 13 *plots named Duplicate, which are treated just in the same way as above ones, but they are kept under rotation of wheat and maize alternately :—*

This is the oldest experiment on the farm. Its objects are more scientific than economical. They may be noted thus:—

(1) To find out that by sowing one kind of grain and by applying one kind of manure for what time the strength of a soil can be kept on ?

(2) Does the rotation change the condition of the fertility ?

Statements Nos. VI and VII will show the results. From the table number 6 it will be seen that even in the bad season the cowdung and saltpetre, singly and combined with other fertilizers, did not fail to give their usual results, and proved to be true in their good effect, in all cases and in every circumstance.

The figures in the table No. 7 show a result contrary to that, which in the majority of cases has been heretofore recorded, *viz.*, the plots alternated with wheat and maize yielded much less than their counterparts. Perhaps this also may be due to the bad season.

(*c*) To compare the manurial value of certain animal matter with the ordinary kind of fertilizers eight plots are kept under this experiment. The site of these plots being most suitable for a wet crop, they are less affected by the unfavourableness of the season. They are on high ground inclined to one direction, so the rain water can never injuriously lodge in them, and there being water-courses on both sides of them, they derive great benefit from the same. When there is excess of rain the trenchment of the water-courses help the plots in subsoil drainage, and otherwise the canal water running in them supply enough moisture to the subsoil.

They are the only plots which have produced a fair crop during the season. Table No. VIII will show the result. Woollen refuse, poudrette, and sheep dung have left a good margin of profit against their cost.

They have generally proved to do the same.

Unfortunately other experiments have been totally spoilt by the hailstorm, and their final results could not be noted, so they are left out here.

MIR MAHOMED HOSEIN, M.R.A.C.,

Asst. Director and Supdt. of Experimental Station.

NANKIN COTTON No. I.—*Experiment of Ratooning and Unratooning outturn and result.*

Quantity of manure applied. per acre.	CALCULATION OF THE RESULT AND COMPARISON OF OUTTURN WITH THE STANDARD PLOT IN THE SERIES.						COMPARISON OF COST AND INCOME WITH THE ORDINARY KIND OF CULTIVATION IN VOGUE IN THIS COUNTRY.									
		1	2	3	4	5	6		7			8	9	10	11
							Actual outturn per acre.		*Value of outturn.*						
	Value of manure	Number of plots as per map of Farm	Weight of cotton.	Weight of seed	Percentage of seed on cotton.	Increase or decrease per acre.	Seed.	Cotton.	Cotton at Re 1 per 4 lbs.	Seed at Re 1 per 41 lbs.	Total	Gain or loss per acre in the cost against the cost of ordinary cultivation assumed to be Rs. 31-4-0.	Gain or loss per acre in the value of outturn against ordinary cultivation assigned to be Rs. 46.	Net profit or loss over or against the assumed income Rs. 45.	REMARKS.
	Rs a.	No. 8.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs	Rs. a	Rs. a.	Rs. a.	Rs a.	Rs a.	Rs. a.	
Saltpetre and Bone superphosphate each 2 cwt	18 9	Ratooned portion.	23	6	35	—8	46	130	11 8	3 3	14 11	* — 9 11	— 30 5	— 40 0	
Ditto ditto, ditto	18 9	Unratooned portion.	26	7	37	...	54	145	13 8	3 9	17 1	— 9 11	— 27 15	— 37 10	

* NOTE —Deducted Rs. 8-14 0 for ploughing, seed, manure, &c.; added Rs. 18-9-0, the cost of purchased manure—the difference shown in column 8.

NANKIN COTTON No. II.—*Experiment of early and late sowing, outturn and result.*

Quantity of manure applied. per acre.	Value of manure and one watering.	Calculation of the result and comparison of outturn with the standard plot in the series.								Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.								
		1	2	3	4	5	6	7	8	9		10			11	12	13	14
										Actual outturn per acre.		*Value of outturn.*						
		Number of plot as per map of Farm.	Weight of uncleaned cotton.	Weight of cleaned cotton.	Weight of seed.	Percentage of cotton on seed.	Percentage of seed on cotton.	Increase or decrease.	Increase or decrease per acre.	Cotton.	Seed.	Cotton @ Re. 1 per 4 lb.	Seed @ Re. 1 per 41 lb.	Total.	Gain or loss per acre in the cost against the cost of ordinary cultivation assumed to be Rs. 31-4-0.	Gain or loss per acre in the value of outturn against ordinary cultivation assumed to be Rs. 45.	Net profit or loss over or against the assumed income Rs. 45.	Remarks.
	Rs. a.		lbs.	lbs.	lbs.	lbs.	lbs.	lbs	lbs.	lbs	lbs.	Rs. a	Rs. a.	Rs. a.	Rs a.	Rs a.	Rs. a.	
Cow-dung 200 mds. and one watering...	7 4	F. 24 before rain.	22	6	17	25	283	1	4	22	64	5 8	1 9	7 1	* 2 12	37 15	40 11	
Ditto but no watering ...	6 0	After rain ...	29	7	22	32	314	...	...	26	83	6 8	2 0	8 8	1 8	36 8	38 0	

* In first case column 11 includes the cost of irrigation as well as of manure and in 2nd case only of manure.

COTTON No. III.—*Experiment of early and late sowing.*

Quantity of manure applied per acre.	Calculation of the result and comparison of outturn with the standard plot in the series.										Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.									
		1		2	3	4	5	6	7	8		9			10	11	12	13
										Actual outturn per acre.		Value of outturn.						
	Value of manure.	No. of plots as per Map of Farm.		Weight of uncleaned cotton.	Weight of cleaned cotton.	Weight of seed.	Percentage of cotton on seed.	Difference.	Difference per acre.	Cotton.	Seed.	Cotton at Re. 1 per 6 lbs.	Seed at Re. 1 per 61 lbs.	Total.	Gain or loss per acre in the cost against the cost of ordinary cultivation assumed to be Rs. 31-4-0.	Gain or loss per acre in the value of outturn against ordinary cultivation assumed to be Rs. 45.	Net profit or loss over or against the assumed income Rs. 45.	Remarks.
	Rs. a.		F. 29	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	
Woolen refuse 205 mds. at Rs 2-8-0 per 100 Mds.	6 4	Sown before rain and one water given.	a.	65	21	44	48	+6	21	82	172	13 10	2 13	15 13	—1 12	—29 13	— 30 15	
Sheep-dung 200 mds. at Rs 3-0-0 per 100 mds.	7 4		b.	92	32	60	53	+16	64	125	234	20 13	3 14	24 11	—2 12	—20 5	—23 1	
Poudrette 200 mds. at Rs. 4-0-0 per 100 mds.	9 4		c.	54	17	37	46	+7	28	66	144	11 0	2 6	13 6	—4 12	— 31 10	—35 6	
Cow-dung 200 mds. at Rs. 3-0-0 per 100 mds.	7 4		d.	46	16	30	53	—4	16	62	127	10 5	1 14	12 3	—2 12	—32 13	—35 9	
							Average	...	...	84	167	13 15	2 11	16 8	—3 0	— 28 8	—31 8	
Woolen refuse 200 mds. at Rs. 2-8-0 per 100 mds.	5 0	Sown after rains and no water required.	a.	44	15	29	52	...	...	58	113	9 10	1 13	11 7	—0 8	—33 9	—34 1	
Sheep-dung 200 mds. at Rs. 3-0-0 per 100 mds.	6 0		b.	50	16	34	47	...	...	62	132	10 5	2 2	12 7	—1 8	—32 9	—34 1	
Poudrette 200 mds at Rs. 4-0-0 per 100 mds.	8 0		c.	32	10	22	45	...	...	39	86	6 8	1 6	7 14	—3 8	—37 2	—40 10	
Cow dung 200 mds. at Rs. 3-0-0 per 100 maunds.	6 0		d.	57	20	37	54	...	...	78	144	13 0	2 6	15 11	—1 8	—29 5	—30 13	
							Average	...	...	59	119	9 14	1 15	11 14	—1 12	—33 2	—34 14	

COTTON No. IV.— (*Kharif*) *Ploughing experiment.*

	Value of ploughing and manure.		Calculation of the result and comparison of outturn with the shallow ploughed and unmanured plot.								Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.												
			1	2	3	4	5	6	7	8	9		10			11		12		13		14
											Actual outturn per acre.		Value of outturn.										
			No. of plots as per map of Farm.	Weight of uncleaned cotton.	Weight of cleaned cotton.	Weight of seed.	Percentage of cotton on seed.	Percentage of seed on cotton.	Difference.	Difference per acre.	Cotton.	Seed.	Cotton at Re. 1 per 6 lbs		Seed at Re 1 per 61 lbs.		Total.		Gain or loss per acre in the cost against the cost of ordinary cultivation assumed to be Rs 31-4-0.		Grin or loss per acre in the value of outturn against ordinary cultivation assumed to be Rs 45.		Net profit or loss over or against the assumed income Rs. 45.	
	Rs.	a.		lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	Rs.	a.	Rs.	a.	Rs.	a.	Rs.	a.	Rs.	a.	Rs.	a.
Twice ploughing with country plough,	1	9	1C 1	7	2 6	4 10	51	195	...	...	38	74	6	5	1	3	7	8	†+4	9	—37	8	—32	15
Once ditto 5″ deep with improved plough.	0	15	2	10	3 7	6 9	·52	191	+1 4	20	55	105	9	3	1	11	10	14	+5	3	—34	2	—28	15
Ditto ditto 9″ ditto with improved plough.	1	9	3	14	4 11	9 5	50	198	+2 8	40	75	150	12	8	2	7	14	15	+4	9	—30	1	—25	8
Twice ploughing with country plough,	1	9	4	6	2 1	3 15	52	191	1	..	33	63	5	8	1	0	6	8	+4	9	—38	8	—33	15
Once ditto 9″ deep and manured with 100 maunds dung (*a*).	4	9	5*a*	25	8 5	16 11	50	199	+	33	50	100	8	5	1	10	9	15	+1	9	—35	1	—33	8
	1	9	5*b*	9	2 13	6 3	45	220	...	...	17	37	2	13	0	9	11	13	+4	9	—33	3	—28	10
Once ditto 5″ deep and do. do.; ...	3	15	6*a*	17	5 13	11 3	52	192	+4	9	35	67	5	13	1	1	6	14	+1	3	—38	2	—36	15
Ditto ditto	0	15	6*b*	13	4 5	8 11	49	201	...	...	26	52	4	5	0	13	5	2	+5	3	—39	14	—34	11
Twice ploughing with country plough and manured with dung 100 maunds per acre in (*a*).	4	9	7*a*	16	5 8	10 8	52	191	+3	6	33	63	5	8	1	0	6	8	+0	9	—38	8	—37	15
	1	9	7*b*	13	4 7	8 9	52	193	...	...	27	51	4	8	0	13	5	5	+4	9	—39	11	—35	2

* NOTE.—From No. 1 to 4 each plot is 300 square yards, show the result of only ploughing and no manure 5 to 7 each portion (*a.* and *b.*) is 800 square yards, show the result of ploughing as well as the result of manured against unmanured plots, all the (*a*) portions were manured and (*b*) were left unmanured.

† The entries of column 11 are made up from the savings of the cost of manure and of the number of ploughing being used in ordinary kind of cultivation of cotton.

MAIZE No. V.—*Sowing experiment on maize sown after American fashion.*

Quantity of manure applied per acre.	Value of manure.	Calculation of the result and comparison of outturn with the plot sown after country way.									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.									
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
											Actual outturn per acre.		*Value of outturn.*						
		Treatment.	Weight of cobs.	Weight of grain.	Weight of stalks.	Weight of grain per bushel.	Percentage of grain on stalks.	Percentage of stalks on grain.	Increase or decrease over the lost plot.	Increase or decrease per acre.	Grain.	Stalks.	Grain at Re. 1 per 61 lbs.	Stalks at Re. 1 per 4,812 lbs.	Total.	Gain or loss per acre in the cost against ordinary cultivation assumed to be Rs. 16.	Gain or loss per acre in the value of outturn against ordinary cultivation assumed to be Rs. 20.	Net profit or loss over or against the assumed income Rs. 20	Remarks.
	Rs. a.	ft.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	
Cow-dung 200 maunds ...	6 0	Seed sown at a distance of 4	192	87	357	61	17	585	—275	1,087	241	1,410	3 15	0 5	4 4	—6 0	—15 12	—21 12	
Ditto ditto ...	6 0	3	842	151	671	61	23	444	—185	—731	597	2,651	9 13	0 9	10 5	—6 0	—9 11	—15 11	
Ditto ditto ...	6 0	2	835	200	635	61	31	317	—136	—538	790	2,509	12 15	0 8	13 7	—6 0	—6 9	—12 9	
Ditto ditto ...	6 0	Behind plough,	996	336	576	61	58	171	...	...	1,328	2,278	21 12	0 8	22 4	—6 0	+2 4	—3 12	

MAIZE No. VI.—*Kharif Standard—Manure experiment.*

Quantity of manure applied per acre.	Calculation of the result and comparison of outturn with the unmanured plot in the series.										Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.									
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
											Actual outturn per acre.		*Value of outturn.*						
	Value of manure.	Number of plots as per map of Farm.	Weight of unthreshed cobs.	Weight of grain.	Weight of stalks.	Weight of grain per bushel.	Percentage of grain on stalks.	Percentage of stalks on grain.	Increase or decrease against unmanured plot.	Increase or decrease per acre.	Grain.	Stalks.	Grain at Re. 1 per 61 lbs.	Stalks at Re. 1 per 4,812 lbs.	Total.	Gain or loss per acre in the cost against the cost of ordinary cultivation assumed to be Rs. 16-8.	Gain or loss per acre in the value of outturn against ordinary cultivation assumed to be Rs. 20.	Net profit or loss over or against the assumed income Rs. 20.	Remarks.
	Rs. a.		lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	Rs. a.	Rs. a	Rs. a.	Rs. a.	Rs. a.	Rs. a.	
Cow-dung 180 maunds and bone-dust 360 lbs.	8 10¾	1	768	180	579	61	31	322	144	1,743	2,178	7,005	35 11	1 7	37 2	— 8 10¾	+ 17 2	+ 8 7¼	
Cow-dung 180 maunds and gypsum 240 lbs.	10 8	2	625	96	522	61	18	544	60	726	1,161	6,316	19 1	1 5	20 6	— 10 8	+ 0 6	— 10 2	
Cow-dung 180 maunds ...	5 6	3	436	80	347	61	23	434	44	533	968	4,198	15 14	0 8	16 6	— 5 8	— 3 10	— 9 0	
*Ashes of 180 maunds, cowdung	15 8	4	587	48	533	...	9	110	12	145	580	6,449	9 8	0 14	10 6	— 15 8	— 9 10	— 25 2	
Saltpetre 240 lbs	10 5	5	709	75	628	61	12	837	39	472	967	7,598	14 4	1 10	15 14	— 10 5	— 4 2	— 14 7	
Saltpetre 240 lbs. and bone super: 240 lbs.	20 0	6	311	70	231	61	30	330	34	412	847	2,795	13 14	0 10	14 8	— 20 0	— 5 8	— 25 8	
Sheep-dung 180 maunds and bone dust 360 lbs.	8 10	7	594	69	521	61	12	814	28	339	774	6,304	12 11	1 5	14 0	— 18 10	— 6 0	— 24 10	
Ashes of 180 maunds dung and saltpetre 240 lbs.	15 13	8	730	118	605	61	19	512	82	992	1,427	7,320	23 6	1 8	24 14	— 15 13	+ 4 14	— 10 15	
Poudrette 180 maunds ...	8 12	9	674	60	605	...	10	1,008	24	291	726	7,320	11 14	1 8	13 6	— 8 12	— 6 10	— 15 6	
Shee-pdung 180 maunds ...	5 6	10	512	58	444	...	13	766	221	266	701	5.372	11 8	1 1	12 9	— 5 6	— 7 7	— 12 13	
Saltpetre 240 lbs and bone dust 360 lbs.	13 9¾	11	677	60	608	...	10	1,013	24	291	726	7,356	11 14	1 8	13 6	— 13 9¾	— 6 11	— 17 3¾	
Sheep-dung 180 maunds and gypsum 240 lbs.	10 8	12	609	70	527	61	13	753	34	412	847	6,376	13 14	1 5	15 3	— 10 8	— 4 13	— 15 5	
No manure	...	13	517	36	475	...	8	1,320	...	...	435	5,747	7 2	1 3	8 5	...	— 11 11	— 11 11	

* Dung cake purchased and burnt for ashes.

MAIZE No. VII.—*Kharif Duplicate—Manure experiment.*

Quantity of manure applied per acre.	Calculation of result and comparison of outturn with the unmanured plot.										Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.								
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
											Actual outturn per acre.		*Value of outturn.*						
	Value of manure.	Number of plots as per map of Farm.	Weight of unthreshed cobs.	Weight of grain.	Weight of stalks.	Weight of grain per bushel.	Percentage of grain on stalks.	Percentage of stalks on grain.	Increase or decrease over the unmanured plot.	Increase or decrease per acre.	Grain.	Stalks.	Grain at Re. 1 per 61 lbs.	Stalk at Re. 1 per 4,812 lbs.	Total.	Gain or loss per acre in the cost against the cost of ordinary cultivation, assumed to be Rs. 16¼.	Gain or loss per acre in the value of outturn against ordinary cultivation assumed to be Rs 20.	Net profit or loss over or against the assumed income Rs. 20.	Remarks.
	Rs. a.		lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	
Sheep-dung 180 maunds ...	5 6	Atta 1	434	60	348	...	17	580	43	520	726	4,210	12 1	0 14	12 15	—5 6	—7 1	—12 7	
Poudrette 180 do. ..	8 12	2	352	96	242	61	40	252	79	955	1,161	2,928	19 0	0 10	19 10	—8 12	—0 6	—9 2	
Ashes of 180 maunds cow-dung and saltpetre 240 lbs.	15 13	3	414	56	348	61	16	621	39	471	677	4,210	11 2	0 14	12 0	—15 13	—8 0	—23 13	
Saltpetre 240 lbs.	10 5	4	518	43	470	61	9	1,093	26	314	520	5 687	8 8	1 3	9 11	—10 5	—10 5	—20 10	
Saltpetre 240 lbs. and bone-dust 360 lbs.	13 9¾	5	435	45	382	61	12	849	28	338	544	4,622	8 15	0 15	9 14	—13 9¾	—10 2	—23 11¾	
Cow-dung 180 maunds ...	5 6	6	551	55	496	61	11	902	38	459	665	6.001	10 14	1 4	12 2	—5 6	—7 14	—10 4	
Ditto 180 do. and bone-dust 360 lbs.	8 10¾	7	499	55	444	61	12	807	38	459	665	5,372	10 14	1 1	11 15	—8 10¾	—8 1	—16 11¾	
Cowdung 180 maunds and Gypsum 240 lbs.	10 8	8	579	44	483	61	9	1,098	27	326	532	5,844	8 12	1 3	9 15	—10 8	—10 1	—20 9	
Ashes of 180 maunds dung ...	5 8	9	485	32	453	61	7	1 416	15	181	337	5,481	6 5	1 2	7 7	—5 8	—12 9	—18 1	
Sheep-dung 180 maunds and bone-dust 360 lbs.	8 10	10	538	48	483	61	10	1,006	31	375	580	5,844	9 8	1 3	10 11	—8 10	— 9 5	—17 15	
Saltpetre 240 lbs. and bone super: 240 lbs.	20 0	11	479	43	427	61	10	993	26	314	520	5,166	8 8	1 1	9 9	—20 0	—10 7	—30 7	
Sheep-dung 180 maunds and Gypsum 240 lbs.	10 8	12	562	33	529	61	6	1,603	16	193	399	6,400	6 9	1 5	7 14	—10 8	—12 2	22 10	
No manure	...	13	311	17	284	61	6	1,670	...	...	205	3 436	3 6	0 11	4 1	...	—15 15	—15 15	

MAIZE No. VIII.—*Animal excreta used as manure.*

Quantity of manure applied per acre.	Calculation of the result and comparison of outturn with unmanured plot.										Comparison of cost with the ordinary kind of cultivation in vogue in this country.								
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
											Actual outturn per acre.		*Value of outturn.*						
	Value of manure.	Number of plots as per map of Farm.	Weight of unthreshed cobs.	Weight of grain.	Weight of stalk.	Weight of grain per bushel.	Percentage of grain on stalk.	Percentage of stalk on grain.	Increase or decrease against unmanured plot.	Increase or decrease per acre.	Grain.	Stalk.	Grain at Re. 1 per 61 lbs.	Stalk at Re. 1 per 4,812 lbs.	Total.	Gain or loss per acre in the cost against the cost of ordinary cultivation assumed to be Rs. 16½.	Gain or loss per acre in the value of outturn against ordinary cultivation assumed to be Rs. 20.	Net profit or loss over or against the assumed income Rs. 20.	Remarks.
	Rs. a.		lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	Rs. a.	Rs. a.	Rs a.	Rs. a.	Rs. a.	Rs. p.	
Woollen refuse 120 maunds and Lime 12 maunds.	6 5	N. 1	540	166	366	61	45	220	65	786	2,009	4,428	32 15	5 7	38 6	— 6 5	+18 6	+12 0	
Sheep-dung 120 maunds ...	3 9½	2	516	164	345	61	48	210	63	762	1,985	4,174	32 8	5 2	37 10	— 3 9½	+17 10	+14 ½	
Cow-dung 120 „ ...	3 9½	3	431	104	321	61	32	309	3	36	1,258	3,884	20 10	4 13	25 7	— 3 9½	+ 5 7	+ 1 13½	
Poudrette 120 „ ...	5 13½	4	538	166	364	61	46	218	65	786	2,009	4,404	32 15	5 7	38 6	— 5 13½	+18 6	+12 8½	
Horse-dung 120 „ ...	3 9½	5	445	110	329	61	33	299	9	109	1,331	3,981	21 13	4 14	26 11	— 3 9½	+ 6 11	+ 3 1½	
Pig's dropping 120 „ ...	3 9½	6	366	105	256	61	41	244	4	48	1,270	3,098	20 13	3 13	24 10	— 3 9½	+ 4 10	+ 1 ½	
Saltpetre 240 lbs. ...	10 5	7	360	105	258	61	41	246	4	48	1,270	3,122¼	20 13	3 6	24 3	—10 5	+ 4 3	— 6 2	
No manure ...	...	8	359	101	254	61	40	251	...	...	1,222	3,073	20 0	3 5	23 5	...	+ 3 5	+ 3 5	

8471